

CLAIMS

1. A sheet feeding apparatus for feeding porous sheets from a stack, the apparatus comprising
 - an air displacement device having an outlet conduit;
 - 5 at least one outlet nozzle connected to the outlet conduit, the, or each, outlet nozzle being displaceable between a pick-up position proximate a first sheet of the stack and a feed position, the air displacement device being configured to generate a flow of air from the, or each, outlet nozzle sufficient to penetrate the first sheet such that a cushion of air is generated between the first sheet and a second sheet to lift the first sheet from the
 - 10 second sheet;
 - an air extraction device having an inlet conduit;
 - at least one inlet nozzle connected to the inlet conduit, the, or each, inlet nozzle defining a pick-up surface and being displaceable between a pick-up position proximate a first sheet of the stack and a feed position, the air extraction device being configured to
 - 15 generate a flow of air into the, or each, inlet nozzle such that the first sheet is drawn against the pick-up surface;
 - a reciprocal drive mechanism for driving the inlet and outlet nozzles reciprocally between the pick-up position and the feed position; and
 - a feed mechanism that is arranged with respect to the inlet and outlet nozzles so that,
 - 20 when the nozzles are driven into the feed position, the feed mechanism engages the first sheet.
2. A sheet feeding apparatus as claimed in claim 1, which includes a plurality of outlet nozzles that are positioned to span the first sheet, a plurality of inlet nozzles, also positioned
- 25 to span the first sheet, an outlet manifold that interconnects the outlet conduit of the air displacement device and the outlet nozzles and an inlet manifold that interconnects the inlet conduit of the air extraction device and the inlet nozzles.
3. A sheet feeding apparatus as claimed in claim 2, in which the inlet and outlet
- 30 nozzles are generally aligned and are in alternating positions with respect to each other.

4. A sheet feeding apparatus as claimed in claim 2, in which the air displacement mechanism is an air pump and the air extraction device is an evacuation pump, both pumps being connected to a shaft of the drive motor so that, when operated, the air pump serves to supply air to the outlet conduit and the evacuation pump serves to draw air into the inlet
5 conduit substantially simultaneously.

5. A sheet feeding apparatus as claimed in claim 3, in which a flexible hose interconnects each nozzle with its respective manifold, thereby facilitating displacement of the nozzles with respect to their respective manifolds.
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6. A sheet feeding apparatus as claimed in claim 5, in which the nozzles are connected to an elongate carrier, which, in turn, is connected to the reciprocal drive mechanism so that the elongate carrier and thus the nozzles can be displaced reciprocally between the pick-up and feed positions.
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7. A sheet feeding apparatus as claimed in claim 6, in which the elongate carrier is a bar and the drive mechanism includes a stepper motor connected to an axle that extends substantially parallel to the bar, a swing arm being interposed between each end of the axle and a corresponding end of the bar so that reciprocal movement generated by the stepper
20 motor can be transmitted to the bar and thus the nozzles.

8. A sheet feeding apparatus as claimed in claim 2, in which each nozzle has a sheet-engaging member that, in respect of the inlet nozzles, defines the pick-up surfaces and, in respect of the outlet nozzles is such that as air is expelled from the outlet nozzles, a region
25 of low pressure is generated intermediate the outlet nozzle and the first sheet, thereby facilitating lifting of the first sheet.

9. A sheet feeding apparatus as claimed in claim 8, in which the feed mechanism is in the form of a roller assembly.
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10. A printer which includes a sheet feeding apparatus as claimed in claim 1.